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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/610,690	06/30/2003	Charles J. Levine	MSFT-1797 (303687.01)	2925

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EXAMINER	
STACE, BRENT S	

ART UNIT	PAPER NUMBER
2161	

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/610,690	LEVINE ET AL.	
	Examiner	Art Unit	
	Brent S. Stace	2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 January 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/27/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Remarks

1. This communication is responsive to the amendment filed January 30th, 2006. Claims 1-20 are pending. In the amendment filed January 30th, 2006, Claims 1, 8, 9, 11,15, 17, 18, and 20 were amended, and Claims 1, 11, 17, and 20 are independent Claims. The examiner acknowledges that no new matter was introduced and the amended and new claims are supported by the specification. This action is made FINAL.

Information Disclosure Statement

2. The Information Disclosure Statements are being considered by the examiner.

Response to Arguments

3. Applicant's arguments filed January 30th, 2006 with respect to Claims 1-20 have been fully considered but they are not persuasive.

4. It should be noted that the scope of Claim 1 has changed to a more specific scope because the amendments. One of such amendments cites "an identical collection of items of data." This new scope has warranted a new grounds of rejection below.

5. As to the applicant's arguments with respect to the prior art relied upon was allegedly combined and not modified, the examiner respectfully disagrees. As noted in

the paragraphs following Claim 1's rejection, the examiner indicated how the references were combined and modified by indicating "to take the test data generation tools from Bowman-Amuah and install it into the invention of Gray." Installing the test data generation tools from Bowman-Amuah into Gray is modifying by adding objects into Gray. This makes a new modified prior art reference referred to as "Gray (as modified by Bowman-Amuah)" by using the combination of the prior arts of Bowman-Amuah and Gray.

6. As to the applicant's arguments with respect to Claim 1 for Bowman-Amuah allegedly not teaching or suggesting "that Bowman-Amuah's tool accepts either data sets or data elements as input", the examiner respectfully disagrees. Bowman-Amuah teaches in the cited section "test data generation tools – usually generate test data by permutation of values of fields, either randomly or systematically." Generating test data by permutation of values of fields is a data set since "values of fields" indicates more than one segment of data.

7. As to the applicant's arguments with respect to Claims 1, 11, 17, and 20 Bowman-Amuah allegedly not teaching or suggesting "that a seed indicates "a position in the sequence of synthetic data,"" the examiner respectfully disagrees. Bowman-Amuah teaches in the cited section "test data generation tools – usually generate test data by permutation of values of fields, either randomly or systematically." Additionally, the paragraph following Claim 1's rejection originally asserts "offering the obvious advantage of pulling synthetic/test, repeatable data according to the seed of Gray." With this information in mind, the examiner now explains, more specifically, the rationale

for the rejection. First, as originally mapped, "seeds" in the claim was mapped to Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data. The seeds of Gray, especially as indicated in program 8, computes a seed where the "seed = next in series" the "next in series" is indicative of the position in a sequence. Bowman-Amuah teaches generating random test data by permutation of values of fields in the cited section. This random data generated must have a seed, as combined, the seeds of Gray are used (hence used as input). The synthetic data (that also must have a sequence) is defined in Bowman-Amuah as the test data generated by permuted from values of fields. The references teach the limitations of the claim as claimed. Based on the appearance that the applicant misunderstood this rejection, the rejection to this claim below has been modified to add clarity. The modification for clarity is justified since it was previously used in the rejection using Gray for the limitation "seed."

8. As to the applicant's arguments with respect to Claims 11, 17, and 20 for the examiner allegedly mischaracterizing the claims as being substantially the same as prior claims, even though the examiner disagrees with this alleged mischaracterization the claims have been explicitly written out and appropriately rejected using substantially a copy/paste methodology from prior rejected claims to aid the Applicant's in understanding the grounds of rejection.

9. As to the applicant's arguments with respect to Claim 20 for the prior art allegedly not teaching "the use of a seed to "drive[]" a data generation function to generate data "corresponding to a particular sequential number,"" the examiner respectfully disagrees.

The explicitly written out and appropriately rejected claim 20 below should show how the prior art teaches this limitation.

Response to Amendment

Specification

10. In light of the applicant's respective arguments or respective amendments, all previous specification objections to the specification have been withdrawn.

Drawings

11. One drawing objection is maintained from the first Office action, the drawing objection is below.

12. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 16. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

13. In light of the applicant's respective arguments or respective amendments, all previous claim objections to the claims have been withdrawn.

Claim Rejections - 35 USC § 101

14. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

15. Claims 1-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

16. Claims 1-16 are rejected under 35 U.S.C. 101 because they are not limited to tangible embodiments. In view of Applicant's disclosure, specification at page 6, paragraph [0022], the medium is not limited to tangible embodiments, instead being defined as including both tangible embodiments (e.g., disk storage) and intangible embodiments (e.g., carrier wave). As such, the claims are not limited to statutory subject matter and are therefore non-statutory. The claims will be favorably considered if the word "embodied" in the claims was replaced by "stored." Claims 2-10, and 12-16 inherit the deficiencies of Claims 1 and 11 respectfully and fail to cure them.

17. Claims 17-20 appear to be no more than an abstract idea with no practical application. As such, the claims are considered non-statutory because the claims lack a useful, concrete, and tangible result.

Claim Rejections - 35 USC § 112

18. In light of the applicant's respective arguments or respective amendments, all previous 35 USC § 112 rejections to the claims have been withdrawn.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

21. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Quickly Generating Billion-Record Synthetic Databases" (Gray et al.) in view of U.S. Patent No. 6,324,647 (Bowman-Amuah).

For **Claim 1**, Gray teaches: "A system for generating data [Gray, page 243, Introduction] comprising:

- a deterministic data generation module embodied on at least one medium, [Gray, page 243, Introduction with Gray, page 244, Sequential Database Generation] and
- a seed" [Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data].

Gray discloses the above limitations but does not expressly teach:

- the deterministic data generation module operating to generate an identical collection of items of data each time the data generation data module is operated,
- "the deterministic data generation module accepting, as a first input, at least one of: (a) data sets and (b) data elements from which synthetic data is generated, said synthetic data having a sequence
- the seed acting as a second input to the deterministic data generation module, the seed indicating a position in the sequence of the synthetic data."

With respect to Claim 1, an analogous art, Bowman-Amuah, teaches:

- the deterministic data generation module operating to generate an identical collection of items of data each time the data generation data module is

operated, [Bowman-Amuah, cols. 101-102, lines 60-11with Gray, page 246, Generating Dense Unique Random Data]

- "the deterministic data generation module accepting, as a first input, at least one of: (a) data sets and (b) data elements from which synthetic data is generated, said synthetic data having a sequence; [Bowman-Amuah, cols. 101-102, lines 60-3 with Gray, page 246, Generating Dense Unique Random Data]
- "the seed acting as a second input to the deterministic data generation module, the seed indicating a position in the sequence of the synthetic data." [Bowman-Amuah, cols. 101-102, lines 60-3 with Gray, page 246, Generating Dense Unique Random Data]

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Bowman-Amuah with Gray because both inventions are directed towards creating test data for a database application.

Bowman-Amuah's invention would have been expected to successfully work well with Gray's invention because both inventions use databases. Gray discloses quickly generating billion-record synthetic databases comprising data generators, however Gray does not expressly disclose that the seed indicates a position in the sequence of the synthetic data. Bowman-Amuah discloses a system, method and article of manufacture for security management in a development architecture framework comprising test data generation tools.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the test data generation tools from Bowman-Amuah and install it into

the invention of Gray, thereby offering the obvious advantage of pulling synthetic/test, repeatable data according to the seed of Gray so that data generation is dynamic according to the database in use by the test data generation tools of Bowman-Amuah and so that the pulling of this data is non strictly numbers as Gray implies which, in turn, pulls the data faster than a system not using the database in use by the test data generation tools of Bowman-Amuah.

Claim 2 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, wherein the deterministic data generation module comprises a computing application" [Gray, page 243, Abstract].

Claim 3 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 2, wherein the computing application comprises a linear congruential generation function" [Gray, page 243, Abstract].

Claim 4 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, wherein the seed is set for each discrete data element that may want to be re-generated" [Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data with Bowman-Amuah, col. 102, lines 1-3].

Claim 5 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system in claim 1, wherein the deterministic data generation module operates in a serial fashion" [Gray, page 244-245, Sequential Database Generation].

Claim 6 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, wherein the deterministic data generation module operates in a parallel fashion" [Gray, page 245, Parallel Database Generation].

Claim 7 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, wherein the system comprises a database environment" [Gray, page 243, Introduction].

Claim 8 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, wherein the first input comprises any of a range of letters, a range of numbers, a range of strings, a range of data sets, letters, numbers, strings, and data sets" [Bowman-Amuah, cols. 101-102, lines 60-3 with Gray, page 246, Generating Dense Unique Random Data].

Claim 9 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, further comprising a communication means, [Gray, page 243, The Computation Model] the communications means operating to communicate the synthetic data to cooperating data environments" [Gray, page 244, above table 3].

Claim 10 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 1, wherein the synthetic data is data for use in benchmarking activities having a predefined data schema definition" [Gray, page 243, Abstract].

For **Claim 11**, Gray teaches: "A method for generating data [Gray, page 243, Introduction] comprising:

- providing a deterministic data generation module on at least one medium, [Gray, page 243, Introduction with Gray, page 244, Sequential Database Generation] the deterministic data generation module accepting inputs for processing to generate a data set having synthesized data [Gray, page 246, Generating Dense Unique Random Data] wherein within the data set each data element has a sequence number, and the data set is organized such that the data is positioned from lowest sequence number to highest sequence number in a sequential fashion; [Gray, page 248, Generating Indices on Random Data] and
- providing a seed" [Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data].

Gray discloses the above limitations but does not expressly teach:

- "as input to the deterministic data generation module, the seed acting to position the deterministic data generation module to generate data having a predefined sequence number, wherein the seed value is derived from the predefined sequence number."

With respect to Claim 11, an analogous art, Bowman-Amuah, teaches:

- "as input to the deterministic data generation module, the seed acting to position the deterministic data generation module to generate data having a predefined sequence number, wherein the seed value is derived from the predefined sequence number" [Bowman-Amuah, cols. 101-102, lines 60-3 with Gray, page 246, Generating Dense Unique Random Data].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Bowman-Amuah with Gray because both inventions are directed towards creating test data for a database application.

Bowman-Amuah's invention would have been expected to successfully work well with Gray's invention because both inventions use databases. Gray discloses quickly generating billion-record synthetic databases comprising data generators, however Gray does not expressly disclose that the seed acts to position the deterministic data generation module to generate data having a predefined sequence number, wherein the seed value is derived from the predefined sequence number. Bowman-Amuah discloses a system, method and article of manufacture for security management in a development architecture framework comprising test data generation tools.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the test data generation tools from Bowman-Amuah and install it into the invention of Gray, thereby offering the obvious advantage of pulling synthetic/test, repeatable data according to the seed of Gray so that data generation is dynamic according to the database in use by the test data generation tools of Bowman-Amuah and so that the pulling of this data is non strictly numbers as Gray implies which, in turn, pulls the data faster than a system not using the database in use by the test data generation tools of Bowman-Amuah.

Claim 12 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The method as recited in claim 11, further comprising communicating the synthesized data to cooperating data environments" [Gray, page 244, above table 3].

Claim 13 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The method as recited in claim 11, further comprising changing the value of the seed" [Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data with Bowman-Amuah, col. 102, lines 1-3].

Claim 14 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The method as recited in claim 11, processing the synthesized data by cooperating environments as part of a benchmarking study" [Gray, page 243, Abstract].

Claim 15 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The method as recited in claim 11, further comprising schematizing the synthesized data according to a predefined data schema definition" [Gray, page 247, program 13].

Claim 16 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "A computer medium having computer readable instructions to instruct a computer to perform the method as recited in claim 11" [Gray, page 243].

For **Claim 17**, Gray teaches: "A system to generate synthetic data [Gray, page 243, Introduction] comprising:

- a means to generate a deterministic set of synthesized data, [Gray, page 243, Introduction] wherein each data element of the data set has a sequential number; [Gray, page 246, Generating Dense Unique Random Data] and
- a means to seed the generating function [Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data] to generate data having a particular sequence

number that is chosen based on the seed" [Gray, page 246, Generating Dense Unique Random Data].

Gray discloses the above limitations but does not expressly teach: "repeatable."

With respect to Claim 17, an analogous art, Bowman-Amuah, teaches: "repeatable" [Bowman-Amuah, cols. 101-102, lines 60-11].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Bowman-Amuah with Gray because both inventions are directed towards creating test data for a database application.

Bowman-Amuah's invention would have been expected to successfully work well with Gray's invention because both inventions use databases. Gray discloses quickly generating billion-record synthetic databases comprising data generators, however Gray does not expressly disclose that repeatable synthetic data can be generated. Bowman-Amuah discloses a system, method and article of manufacture for security management in a development architecture framework comprising test data generation tools where there is a tool for repeating (test) cycles based on the original data created for the cycle.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the test data generation tools from Bowman-Amuah and install it into the invention of Gray, thereby offering the obvious advantage of allowing developers to create and maintain input data and expected results associated with a test plan as cited in Bowman-Amuah.

Claim 18 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 17, wherein the seed comprises a value in a range from one to the maximum number of data elements of the data set" [Gray, page 246, Generating Dense Unique Random Data with Gray, page 246, program 8].

Claim 19 can be mapped to Gray (as modified by Bowman-Amuah) as follows: "The system as recited in claim 17, further comprising a communicating means, [Gray, page 243, The Computation Model] the communicating means for use to communicate the generated synthesized data to cooperating data environments" [Gray, page 244, above table 3].

For **Claim 20**, Gray teaches: "A method to generate synthesized data [Gray, page 243, Introduction] comprising:

- executing a deterministic data generation function to generate data set [Gray, page 243, Introduction] corresponding to sequential numbers, the numbers associated with a data element of the data set; [Gray, page 246, Generating Dense Unique Random Data] and
- setting a seed [Gray, page 246, program 8 with Gray, page 247, program 13 with Gray, page 248, program 18 with Gray, page 250, Generating Non Uniform Data] to act as input for the deterministic data generation function such that the input drives the deterministic data generation function to generate data corresponding to a particular sequential number" [Gray, page 246, Generating Dense Unique Random Data, specifically, the first paragraph under the heading].

Gray discloses the above limitations but does not expressly teach: "repeatable."

With respect to Claim 20, an analogous art, Bowman-Amuah, teaches: "repeatable" [Bowman-Amuah, cols. 101-102, lines 60-11].

It would have been obvious to one of ordinary skill in the art at the time of invention to combine Bowman-Amuah with Gray because both inventions are directed towards creating test data for a database application.

Bowman-Amuah's invention would have been expected to successfully work well with Gray's invention because both inventions use databases. Gray discloses quickly generating billion-record synthetic databases comprising data generators, however Gray does not expressly disclose that repeatable synthetic data can be generated. Bowman-Amuah discloses a system, method and article of manufacture for security management in a development architecture framework comprising test data generation tools where there is a tool for repeating (test) cycles based on the original data created for the cycle.

It would have been obvious to one of ordinary skill in the art at the time of invention to take the test data generation tools from Bowman-Amuah and install it into the invention of Gray, thereby offering the obvious advantage of allowing developers to create and maintain input data and expected results associated with a test plan as cited in Bowman-Amuah.

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brent S. Stace whose telephone number is 571-272-8372 and fax number is 571-273-8372. The examiner can normally be reached on M-F 9am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A. Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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